

CLAIMS

What is claimed is:

1. An apparatus for use in accessing a vasculature of a patient, the apparatus comprising:

5 (a) a pedestal;

(b) mobility means operably associated with said pedestal for enabling said pedestal to be mobile;

(c) a limb support table operably associated with said pedestal for supporting a limb of the patient;

10 (d) at least one storage device operably associated with at least one of said pedestal and said limb support table; and

(e) a vessel visualization device operably associated with at least one of said pedestal and said limb support table for improving visualization of the vasculature of the patient.

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2. The apparatus of claim 1 wherein said pedestal comprises:

(a) a base; and

(b) a structural member, attached to said base, to which said limb support table is adjustably securable.

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3. The apparatus of claim 1 wherein said mobility means comprises a plurality of at least one of wheels and glides attached to said pedestal.

4. The apparatus of claim 1 wherein said mobility means comprises an air cushion system attached to said pedestal.

5. The apparatus of claim 1 wherein said limb support table comprises:

5 (a) a brace detachably attachable to a top surface of said limb support table for contact with the limb of the patient; and

(b) a handgrip for the patient to grip.

10 6. The apparatus of claim 5 wherein said brace comprises at least one strap for securing the limb to said brace and thereby limit movement thereof.

7. The apparatus of claim 5 wherein said brace is capable of being used with a disposable cover therefor.

15 8. The apparatus of claim 5 wherein said brace is disposable.

9. The apparatus of claim 5 wherein said brace has a transparent surface for enabling the limb to be backlit therethrough.

20 10. The apparatus of claim 5 wherein said limb support table further comprises a handgrip support to which said handgrip is affixed, said handgrip support being slideably attached to said limb support table so that said limb support table can accommodate the patient essentially regardless of a size of the limb thereof.

11. The apparatus of claim 1 further comprising a brace detachably attached to said limb support table for contact with the limb of the patient.

5 12. The apparatus of claim 11 wherein said brace comprises at least one strap for securing the limb to said brace and thereby limit movement thereof.

13. The apparatus of claim 11 wherein said brace is capable of being used with a disposable cover therefor.

10 14. The apparatus of claim 11 wherein said brace is disposable.

15 15. The apparatus of claim 11 wherein said brace has a transparent surface for enabling the limb to be backlit therethrough.

16. The apparatus of claim 1 further comprising:

(a) a handgrip for the patient to grip; and

(a) a handgrip support to which said handgrip is affixed, said handgrip support being slideably attached to said limb support table so that said limb support table can accommodate the patient essentially regardless of a size of the limb thereof.

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17. The apparatus of claim 1 further comprising a heated pad associated with said limb support table for warming the limb.

25 18. The apparatus of claim 1 wherein said least one storage device comprises a compartment at least one of incorporated underneath and attached to said limb support table.

19. The apparatus of claim 1 wherein said least one storage device comprises a channel defined within said limb support table.

5 20. The apparatus of claim 1 wherein said least one storage device comprises a tray adjustably attached to said pedestal.

21. The apparatus of claim 1 wherein said least one storage device comprises a drawer adjustably attached to said pedestal.

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22. The apparatus of claim 21 wherein said drawer includes at least one of compartments and bins of various sizes.

15 23. The apparatus of claim 1 wherein said least one storage device comprises a rack adjustably attached to said pedestal.

24. The apparatus of claim 23 wherein said rack includes at least one of compartments and bins of various sizes.

20 25. The apparatus of claim 1 wherein said vessel visualization device includes a magnifying glass connected articulately to at least one of said pedestal and said limb support table.

25 26. The apparatus of claim 1 wherein said vessel visualization device includes a light connected articulately to at least one of said pedestal and said limb support table.

27. The apparatus of claim 1 wherein said vessel visualization device includes an infrared imager connected articulately to at least one of said pedestal and said limb support table.

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28. The apparatus of claim 1 wherein said vessel visualization device includes an ultrasound imager connected articulately to at least one of said pedestal and said limb support table.

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29. The apparatus of claim 1 wherein said vessel visualization device includes an optically-guided system for guiding and positioning of a needle for puncture into a desired vessel of the vasculature.

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30. The apparatus of claim 1 further comprising an adjustment means for enabling a position of said limb support table to be adjustable relative to said pedestal.

31. The apparatus of claim 1 further comprising at least one strap for securing the limb to said limb support table and thereby limit movement thereof.

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32. The apparatus of claim 1 further comprising a power supply for providing electrical power to at least said vessel visualization device.

33. An apparatus for use in accessing a vasculature of a patient, the apparatus comprising:

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(a) a limb support table for supporting a limb of the patient;

(b) a vessel visualization device for improving visualization of the vasculature of the patient; and

(c) a mounting system for mounting said limb support table and said vessel visualization device in proximity to and adjustably with respect to the patient.

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34. The apparatus of claim 33 wherein said limb support table comprises:

(a) a brace detachably attachable to a top surface of said limb support table for contact with the limb of the patient; and

(b) a handgrip for the patient to grip.

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35. The apparatus of claim 34 wherein said brace comprises at least one strap for securing the limb to said brace and thereby limit movement thereof.

36. The apparatus of claim 34 wherein said brace is capable of being used with a disposable cover therefor.

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37. The apparatus of claim 34 wherein said brace is disposable.

38. The apparatus of claim 34 wherein said brace has a transparent surface for enabling the limb to be backlit therethrough.

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39. The apparatus of claim 34 wherein said limb support table further comprises a handgrip support to which said handgrip is affixed, said handgrip support being slideably attached to said limb support table so that said limb support table can accommodate the patient essentially regardless of a size of the limb thereof.

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40. The apparatus of claim 33 further comprising a brace detachably attached to said limb support table for contact with the limb of the patient.

5 41. The apparatus of claim 40 wherein said brace comprises at least one strap for securing the limb to said brace and thereby limit movement thereof.

42. The apparatus of claim 40 wherein said brace is capable of being used with a disposable cover therefor.

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43. The apparatus of claim 40 wherein said brace is disposable.

44. The apparatus of claim 40 wherein said brace has a transparent surface for enabling the limb to be backlit therethrough.

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45. The apparatus of claim 33 further comprising:

(a) a handgrip for the patient to grip; and

(a) a handgrip support to which said handgrip is affixed, said handgrip support being slideably attached to said limb support table so that said limb support table can
20 accommodate the patient essentially regardless of a size of the limb thereof.

46. The apparatus of claim 33 further comprising a heated pad associated with said limb support table for warming the limb.

47. The apparatus of claim 33 wherein said mounting system comprises an overhead counterpoise by which said limb support table is mountable in proximity to the patient.

48. The apparatus of claim 33 wherein said mounting system includes a first articulating arm by which said limb support table is mountable to a table for the patient.

49. The apparatus of claim 33 wherein said mounting system includes a first articulating arm by which said limb support table is mountable to a separate chair for the patient.

50. The apparatus of claim 33 wherein said mounting system includes a mobile pedestal to which said limb support table is adjustably mounted and thus made mobile.

51. The apparatus of claim 33 wherein said vessel visualization device is connected articulately to said limb support table via a second articulating arm.

52. The apparatus of claim 33 wherein said vessel visualization device includes a magnifying glass connected articulately to said limb support table.

53. The apparatus of claim 33 wherein said vessel visualization device includes a light connected articulately to said limb support table.

54. The apparatus of claim 33 wherein said vessel visualization device includes an infrared imager connected articulately to said limb support table.

55. The apparatus of claim 33 wherein said vessel visualization device includes an ultrasound imager connected articulately to said limb support table.

56. The apparatus of claim 33 wherein said vessel visualization device is wearable
5 over the eyes by an operator-thereof.

57. The apparatus of claim 33 wherein said vessel visualization device includes an optically-guided system for guiding and proper positioning of a needle for puncture into a desired vessel of the vasculature.

58. The apparatus of claim 33 further comprising a storage device attached to or incorporated into at least one of said limb support table and said mounting system.

59. The apparatus of claim 58 wherein said storage device comprises a channel
15 defined within said limb support table.

60. The apparatus of claim 58 wherein said storage device comprises a drawer slideable within said limb support table.

61. The apparatus of claim 60 wherein said drawer includes at least one of
20 compartments and bins of various sizes.

62. The apparatus of claim 33 further comprising a vessel immobilizer device operably associated with at least one of said limb support table and said mounting system.

63. The apparatus of claim 33 further comprising a heat lamp operably associated with at least one of said limb support table and said mounting system.

64. The apparatus of claim 33 further comprising an air pump for at least providing suction to raise a vessel of the vasculature.

65. The apparatus of claim 33 further comprising a camera operably associated with at least one of said limb support table and said mounting system for close monitoring of the limb and the vasculature thereof.

66. The apparatus of claim 33 further comprising a tape dispenser operably associated with at least one of said limb support table and said mounting system.

67. The apparatus of claim 33 further comprising a power supply for providing electrical power to the apparatus.

68. A method of accessing a vasculature of a patient, the method comprising the steps of:

- (a) providing the apparatus of claim A1;
- (b) moving the apparatus in proximity to the patient;
- (c) placing a limb of the patient on said limb support table;
- (d) retrieving an access conduit from said at least one storage device;
- (e) inserting said access conduit into a vessel of the patient;
- (f) strain relieving said access conduit; and
- (g) removing the limb of the patient from said limb support table.

69. The method of claim 68 further comprising the step of using said vessel visualization device to improve visualization of the vessel before accessing the vessel with said access conduit.

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70. The method of claim 68 further comprising the step of securing the limb of the patient to said limb support table.

71. The method of claim 68 further comprising the step of adjusting the position of
10 said limb support table.

72. The method of claim 68 further comprising the step of moving the apparatus away from the patient.